Aruba 7280 Controller

Installation Guide

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This document describes the hardware features of the Aruba 7280 Controller. It provides a detailed overview of the physical and performance characteristics of each controller model and explains how to install the controller and its accessories.

Guide Overview

- Chapter 1, "7280 Controller" on page 7 provides a detailed hardware overview of the 7280 controller and each of its components.
- Chapter 2, "Installation" on page 19 describes how to install the 7280 controller in a number of ways and how to install each its components.
- Chapter 3, "Specifications, Safety, and Compliance" on page 31 lists the 7280 controller's technical specifications and safety and regulatory compliance information.

Related Documentation

The latest ArubaOS User Guide and ArubaOS CLI Reference Guide are required for the complete management of an Aruba controller. The latest documentation and the translation of this document into other languages can be found at www.arubanetworks.com/documentation.

Contacting Support

Table 1 *Contact Information*

Main Site	www.arubanetworks.com
Support Site	https://support.arubanetworks.com
Airheads Social Forums and Knowledge Base	community.arubanetworks.com
North American Telephone	1-800-943-4526 (Toll Free) 1-408-754-1200
International Telephones	http://www.arubanetworks.com/support-services/contact-support/
Software Licensing Site	https://hpe.com/networking/support
End of Support information	http://www.arubanetworks.com/support-services/end-of-life-products/end-of-life-policy/
Security Incident Response Team (SIRT)	Site: http://www.arubanetworks.com/support-services/security-bulletins/ Email: aruba-sirt@hpe.com

The Aruba 7280 Controller is a wireless LAN controller that connects, controls, and intelligently integrates wireless Access Points (APs) and Air Monitors (AMs) into a wired LAN system.

The 7280 controller includes the following five models, and they do not differ physically or functionally from each other:

- 7280-US: For the United States of America
- 7280-RW: For the rest of the world
- 7280-JP: For Japan
- 7280-IL: For Israel
- 7280-EG: For Egypt

The 7280 controller has the following port configuration:

Table 2 *7280 Controller Port Configuration*

Model	Ports	Number of APs Supported	Number of Users Supported
7280-xx	• 2 x 40GbE (QSFP+) ports • 8 x 10GBase-X (SFP+) ports • USB 2.0 interface • Console port • Micro USB console port • Management port	2048	32000

The 7280 controller requires ArubaOS 6.5.4 or later version.

Package Checklist

Inform your supplier if there are any incorrect, missing, or damaged parts. If possible, retain the carton, including the original packing materials (see Table 3). Use these materials to repack and return the unit to the supplier if needed.

Table 3 *Package Contents*

Item	Quantity
Aruba 7280-xx Controller	1
Mounting Brackets	2
M6 x 15 mm Phillips Pan Head Screws	4
M4 x 8 mm Phillips Flat Head Screws	8

Table 3 *Package Contents (Continued)*

Item	Quantity
M6 x 7 mm Grounding Screws	2
Power Cable	1
Micro-USB Cable	1
Rubber Feet	4
Aruba 7280 Start-up Guide (Printed)	1
End User License Agreement (Printed)	1

NOTE

Optional accessories are available for use with the Aruba 7280 controller and are sold separately. Contact your Aruba sales representative for details and assistance.

7280 Controller Components

This section introduces the component and its location in the Aruba 7280 controller.

Figure 1 shows the front panel of the Aruba 7280 controller and Figure 2 shows the back panel of the Aruba 7280 controller.

Figure 1 *Front Panel of the Aruba 7280 Controller*

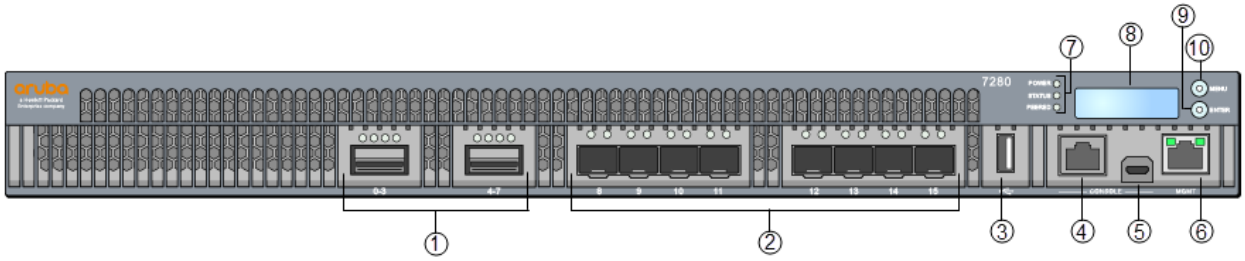
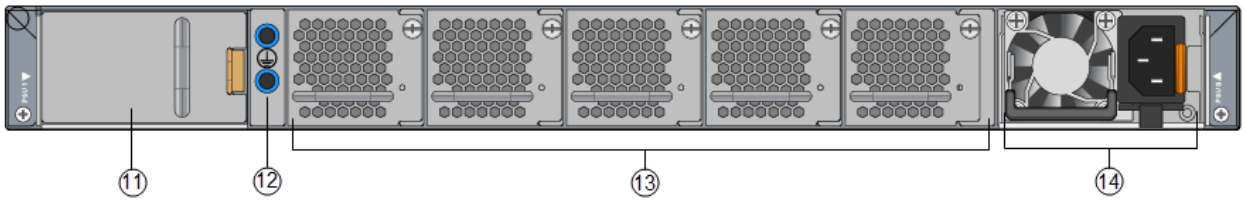


Figure 2 *Back Panel of the Aruba 7280 Controller*



The following table lists the components on the Aruba 7280 controller:

Table 4 *Aruba 7280 Controller Components*

Callout	Component	Description	Page
1	40 GbE QSFP+ Ports	2 x 40 GbE QSFP+ ports	9
2	10GBase-X (SFP+) Ports	8 x 10GBase-X (SFP+) Ports	12

Table 4 *Aruba 7280 Controller Components (Continued)*

Callout	Component	Description	Page
3	USB Interface	USB storage device can be used to save and upload configurations	13
4	Console Port	RJ-45 serial console access port	13
5	Micro USB Console Port	Provides console access for direct local access	14
6	Management Port	Used to connect to a separate management network	15
7	Power, Status, and Peered LEDs	Used for basic monitoring of the Aruba 7280 controller	15
8	LCD	Used to configure LED behavior and other basic operations	16
9	Enter Button	Used to execute actions on the LCD screen	
10	Menu Button	Used to select the LCD screen menu	
11	PSU Slot 1	Slot for additional power supply module	18
12	Grounding Points	Used to attach the grounding screws	18
13	Fans	5 x hot-swappable high speed fans	18
14	PSU Slot 0	Primary power supply module	18

40 GbE QSFP+ Ports

The Aruba 7280 controller includes two 40 GbE QSFP+ ports labeled 0-3 and 4-7. It is recommended to use Aruba supported QSFP+ transceivers in these ports.

Each 40 GbE QSFP+ port is equipped with four Link LEDs above the port allowing you to monitor the status on the port. These ports also support 40G split cable (4 x 10G).

The following table describes the Link LED behavior for each mode:

Table 5 40 GbE QSFP+ *Port LEDs*

Mode	Indicator	Status
40 G	Amber (Solid)	40 G link is established
	Off	No link
4 x 10 G	Green (Solid)	4 x 10 G port link is established (using 40 G to 4 x 10G splitter cable)
	Off	No link

10G/40G Interfaces GRE Tunnel Port Behavior

The 7280 controller can handle different port speeds from Port 1 to Port 10. When one of the ports is running 1G, then the remaining ports also run 1G. Refer to the table below for port details and behavior.

Table 6 *Non Jumbo Traffic*

Port 0	Port 1	Port 2	Port 3	Port 4	Port 5	Port 6	Port 7
40G				40G			
40G				40G			
40G				40G			
40G				40G			
10G	10G	10G	10G	10G	10G	10G	10G
10G	10G	10G	10G	10G	10G	10G	10G
10G	10G	10G	10G	10G	10G	10G	10G
10G	10G	10G	10G	10G	10G	10G	10G

Table 7 *Non Jumbo Traffic*

Port 8	Port 9	Port 10	Port 11	Port 12	Port 13	Port 14	Port 15
10G	10G	10G	10G	10G	10G	10G	10G
10G	10G	10G	10G	1G	1G	1G	1G
1G	1G	1G	1G	10G	10G	10G	10G
1G	1G	1G	1G	1G	1G	1G	1G
10G	10G	10G	10G	10G	10G	10G	10G
10G	10G	10G	10G	1G	1G	1G	1G
1G	1G	1G	1G	10G	10G	10G	10G
1G	1G	1G	1G	1G	1G	1G	1G

Table 8 *Jumbo Traffic (only 2 10G ports are allowed)*

Port 0	Port 1	Port 2	Port 3	Port 4	Port 5	Port 6	Port 7
40G				10G	10G	NA	NA
40G				10G	10G	NA	NA
40G				1G	1G	NA	NA
40G				1G	1G	NA	NA
10G	10G	10G	10G	10G	10G	NA	NA
10G	10G	10G	10G	10G	10G	NA	NA
10G	10G	10G	10G	1G	1G	NA	NA

Table 8 *Jumbo Traffic (only 2 10G ports are allowed)*

Port 0	Port 1	Port 2	Port 3	Port 4	Port 5	Port 6	Port 7
10G	10G	10G	10G	1G	1G	NA	NA

Table 9 *Jumbo Traffic (only 2 10G ports are allowed)*

Port 8	Port 9	Port 10	Port 11	Port 12	Port 13	Port 14	Port 15
40G				10G	10G	NA	NA
40G				1G	1G	NA	NA
40G				10G	10G	NA	NA
40G				1G	1G	NA	NA
10G	10G	10G	10G	10G	10G	NA	NA
10G	10G	10G	10G	1G	1G	NA	NA
10G	10G	10G	10G	10G	10G	NA	NA
10G	10G	10G	10G	1G	1G	NA	NA

Supported QSFP+ Modules and DAC Cables

QSFP+ modules are a compact, hot-pluggable transceiver used for data communications applications. It interfaces networking hardware to a fiber optic cable or active or passive electrical copper connection to other devices.

Direct attach cables (DACs) are installed in an uplink port in the same manner as an QSFP+ module.

Aruba tests and supports Aruba optics within their controller systems. Third party optics are not tested or supported; therefore, Aruba does not guarantee proper functionality of third party optics when used in an Aruba system.

Following is the list of QSFP+ modules and DAC cables supported in 7280 controllers:

- QSFP+ modules:
  - JH231A— HPE X142 40G QSFP+ MPO SR4 Transceiver
  - JH232A— HPE X142 40G QSFP+ LC LR4 SM Transceiver
  - JH233A— HPE X142 40G QSFP+ MPO eSR4 300M Transceiver
- DAC cables:
  - JH234A— HPE X242 40G QSFP+ to QSFP+ 1m Direct Attach Copper Cable
  - JH235A— HPE X242 40G QSFP+ to QSFP+ 3m Direct Attach Copper Cable
  - JH236A— HPE X242 40G QSFP+ to QSFP+ 5m Direct Attach Copper Cable

10GBase-X (SFP+) Ports

The 7280 controller is equipped with eight 10GBase-X (SFP+) ports. These port are labeled as 8 to 15. These ports are intended for use with Aruba SFP/SFP+. These ports support dual speed (1GbE or 10GbE) operation.

Aruba tests and supports Aruba optics within their controller systems. Third party optics are not tested or supported; therefore, Aruba does not guarantee proper functionality of third party optics when used in an Aruba system.

Each 10GBase-X port is equipped two LEDs that allow you to monitor the status of and activity on the port. These LEDs provide basic monitoring of the status, activity, and basic configuration of each port. The information displayed by these LEDs can be changed via LCD.

- **LINK/ACT**: Placed on the left side of the port, and displays the link status and activity of the port.
- **STATUS**: Placed on the right side of the port, and displays the status of the port based on the information displayed by this LED changes based on LCD's mode.

The following table describes the LED behavior for each mode:

Table 10 *10GBase-X Port LEDs*

LED	Function	Indicator	Status
LINK/ACT	Link status	Green (Solid)	Link established
		Green (Blinking)	Port is transmitting or receiving data
		Off	No link
STATUS	Port status	Green (Solid)	Link at 10 Gbps
		Off	Link at 1 Gbps

Supported SFP/SFP+ Modules and DAC Cables

SFP/SFP+ modules, also known as mini-GBICs, are hot-swappable and provide optical or copper connections to other devices.

Direct attach cables (DACs) are installed in an uplink port in the same manner as an SFP/SFP+ module.

For the list of Aruba approved DAC cables and SFP/SFP+ modules for controllers, see Table 11 and Table 12.

Other non-approved third-party optics or DAC cables are not tested or supported by Aruba on controllers; therefore, Aruba does not guarantee their proper functionality when used with Aruba controllers.

Table 11 *Supported DAC Cables*

DAC	Description
DAC-SFP-10GE-50CM	50cm Direct Attach Cable; 10G SFP+
DAC-SFP-10GE-1M	1m Direct Attach Cable; 10G SFP+
DAC-SFP-10GE-3M	3m Direct Attach Cable; 10G SFP+

Table 11 *Supported DAC Cables*

DAC	Description
DAC-SFP-10GE-5M	5m Direct Attach Cable; 10G SFP+
DAC-SFP-10GE-7M	7m Direct Attach Cable; 10G SFP+

Table 12 *Supported SFP/SFP+ Modules*

SFP/SFP+	Description
SFP-SX	SFP, 1000BASE-SX, LC Connector; 850nm pluggable GbE optic; up to 300 meters over multi-mode fiber (Type OM2).
SFP-LX	SFP, 1000BASE-LX, LC Connector; 310nm pluggable GbE optic; up to 10,000 meters over single-mode fiber.
SFP-TX	SFP, 1000BASE-T SFP; copper GbE pluggable; RJ45 connector; up to 100 meters over Category-5, 5e, 6 and 6a unshielded twisted pair cable.
SFP-EX	1000BASE-ZX SFP; 1310nm pluggable GbE optic; LC connector; up to 40,000 meters over single mode fiber.
SFP-ZX	1000BASE-ZX SFP; 1310nm pluggable GbE optic; LC connector; up to 70,000 meters over single mode fiber
SFP-10G-SR	SFP+, 10GBASE-SR, 850nm serial pluggable SFP+ optic, target range 300m over MMF, LC Connector
SFP-10G-LR	SFP+, 10GBASE-LR, 1310nm serial pluggable SFP+ optic for up to 10km over SMF, LC Connector
SFP-10G-LRM	SFP+, 10GBASE-LRM, 1310nm serial pluggable SFP+ optic, long-reach multi mode, LC connector
SFP-10G-ER	SFP+, 10GBASE-ER, 1310nm pluggable 10GE optic; up to 40,000 meters over single-mode fiber, LC connector
SFP-10G-ZR	SFP+, 10GBASE-ZR, 1310nm pluggable 10GE optic; up to 70,000 meters over single-mode fiber, LC connector

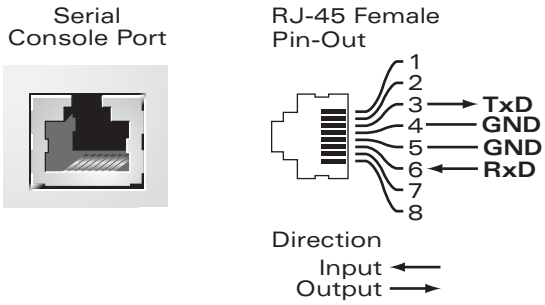
USB Interface

The Aruba 7280 controller is equipped with a USB 2.0 interface. See Figure 5 on page 15. A USB storage device can be used to save and upload configurations to the controller. USB functions are controlled through the LCD panel on the front of the controller. For more information on the LCD panel and its functions, see “LCD Panel” on page 16.

Console Port

Use the serial CONSOLE port to allow direct local management. See Figure 5 on page 15. This port is a RJ-45 female connector that accepts an RS-232 serial cable with a male connector.

Figure 3 *Serial Console Port Pin-Out*



The communication settings for the Console port is shown in the following table:

Table 13 *Console Terminal Settings*

Baud Rate	Data Bits	Parity	Stop Bits	Flow Control
9600	8	None	1	None

CAUTION

The CONSOLE port is compatible only with RS-232 devices. Non-RS-232 devices, such as APs, are not supported.

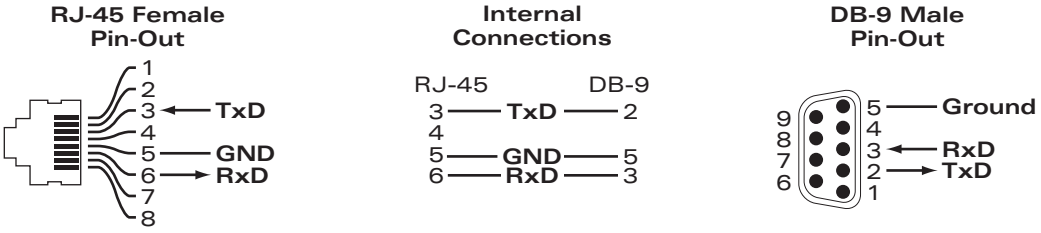
CAUTION

Do not connect the Console port to an Ethernet switch or a PoE power source. This may damage the controller.

Serial Console Port Adapter

A modular adapter can be used to convert the female RJ-45 connector to a male DB9 connector. See Figure 4 for complete details.

Figure 4 *RJ-45 (Female) to DB9 (Male) Modular Adapter Conversion*



Micro USB Console Connector

The Aruba 7280 controller is equipped with a micro USB (type B) connector that provides console access for direct local access. See Figure 5 on page 15. If both micro USB and RJ-45 console ports are connected, the micro USB connection takes precedence over the RJ-45 console connection.

Micro USB Driver

To use the micro USB console port, you must install the Aruba micro USB driver on the computer that will manage your controller. To download the driver, perform the following steps:

1. Go to https://support.arubanetworks.com.
2. Click on the **Tools & Resources** tab.

3. Open the **USB Console Driver** folder.
4. Open the **Mobility Controller and Mobility Access Switch** folder.
5. Select the appropriate file for your application. The corresponding operating system is in the file name.

Management Port

The Aruba 7280 controller is equipped with a 10/100/1000BASE-T Gigabit Management (RJ-45) port. See Figure 5 on page 15.

The management port provides 10/100/1000 Mbps Ethernet access to the Aruba 7280 controller CLI, SNMP, and Web interface for complete system management and troubleshooting. It can also be used to connect to a separate management network.

The management port has an LINK/ACT LED on its left side and SPEED LED on its right side. During operation, these LEDs provide status information as shown in the following table:

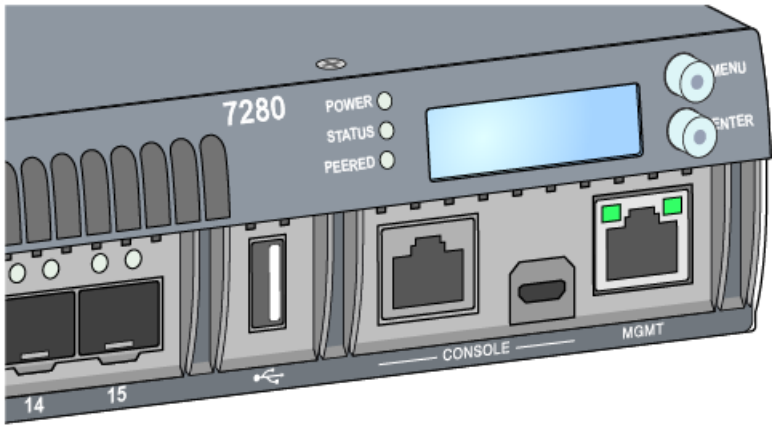
Table 14 *10/100/1000BASE-T (RJ-45) Management Port*

LED	Function	Indicator	Status
LINK/ACT	Link Status Information	Green (Solid)	Link has been established
		Green (Blinking)	Link activity
		Off	No link on port
SPEED	Interface Speed	Green (Solid)	1000 Mbps
		Off	10/100 Mbps

Power, Status, and Peered LEDs

The front panel also includes power, status, and peered LEDs that provide basic monitoring of the overall status of the Aruba 7280 controller. See Figure 5.

Figure 5 *Ports, LEDs, and LCD Panel*



The following table show the LED indicators and the corresponding status:

Table 15 *Power, Status, and Peered LEDs*

LED	Function	Indicator	Status
Power	System powers	Green (Solid)	Power On
		Off	Power Off
Status	System status	Green (Solid)	Operational
		Green (Blinking)	Device is loading software
		Amber (Blinking)	Major alarm
		Amber (Solid)	Critical alarm
		Off	No power
Peered	Reserved for future use	N/A	N/A

LCD Panel

The Aruba 7280 controller is equipped with an LCD panel (see Figure 5 on page 15.) that displays information about the controller's status and provides a menu that allows basic operations such as initial setup and reboot. The LCD panel displays two lines of text with a maximum of 16 characters on each line. When using the LCD panel, the active line is indicated by an arrow next to the first letter.

The LCD panel is operated using the two navigation buttons to the right of the screen.

- **Menu**: Allows you to navigate through the menus of the LCD panel.
- **Enter**: Confirms and executes the action currently displayed on the LCD panel.

LCD Mode Menu

The LCD mode menu includes four modes as shown in the following table.

Table 16 *LCD Panel Mode*

LCD Mode	Function	Displays	Description
Boot	Displays the boot status of the controller.	"Booting ArubaOS...	Boot status of the controller
LED	Displays the mode of the STATUS LED of ports. The LED mode menu allows to choose what information is communicated by the STATUS LEDs on each port. See Table 10 on page 12 for descriptions of the LED behavior of each mode.	LED mode: ADM	Administrative– Displays whether the port is administratively enabled or disabled
		LED mode: SPD	Speed– Displays the speed of the port
		Exit	Exit LED menu

Table 16 *LCD Panel Mode (Continued)*

LCD Mode	Function	Displays	Description
Status	Displays the ArubaOS version.	OS Version	ArubaOS version
		Exit	Exit Status menu
Maintenance	Allows execution of some basic operations such as uploading an image or rebooting the controller	Upgrade Image [Partition 0 [Y|N] | Partition 1 [Y|N]]	Upgrade the controller image on the selected partition from a predefined location on an attached USB flash device
		Upload config [Y | N]	Upload the controller's current configuration to a predefined location on the attached USB flash device
		Factory Default [Y|N]	Reset the device to factory default settings
		Media Eject [Y| N]	Complete reading or writing to the attached USB device
		Reload system [Y|N]	Reload controller
		Halt system [Y|N]	Halt controller
		Exit	Exit Maintenance menu

Disabling the LCD Screen

By default, the LCD screen is enabled. However, if the 7280 controller is deployed in a location without physical security, the LCD screen can be disabled through the CLI. When disabled, pushing one of the navigation buttons will only illuminate the LCD screen and display the slot, role, device name, and any alarms.

Additionally, it is possible to disable only the maintenance menu. This allows you to change the LED behavior and view the device status but prevent upgrades and configuration changes.

To disable the LCD screen, enter the Enable mode and use the following CLI commands:

```
(host) #configure terminal
(host) (config) #lcd-menu
(host) (lcd-menu) #disable menu
```

To disable only the Maintenance menu or one of its sub-menus, enter the Enable mode and use the following CLI commands:

```
(host) #configure terminal
(host) (config) #lcd
(host) (lcd-menu) #disable menu maintenance ?
   factory-default
   halt-system
   media-eject
   reload-system
   upgrade-image
   upload-config
(host) (lcd-menu) #disable menu maintenance upgrade-image ?
   partition0
   partition1
```

PSU Slot 1

The Aruba 7280 controller includes a PSU slot 1 that has a filler panel covering the opening. PSU slot 1 is for an additional power supply module that may be required for redundancy. PSU slot 1 can hold the same power supply module as PSU slot 0. For more details, see "PSU Slot 0" on page 18.

Grounding Point

To meet safety and electromagnetic interference (EMI) requirements and to ensure proper operation, the controller must be adequately grounded before power is connected. Connect a grounding cable to earth ground and then attach it to the chassis grounding point using two screws.

Comply with electrical grounding standards during all phases of installation and operation of the product. Do not allow the controller's chassis, network ports, power supply, or mounting brackets to contact any device, cable, object, or person attached to a different electrical ground. Also, never connect the device to external storm grounding sources.

Fan Module

The Aruba 7280 controller is equipped with five field-replaceable, hot-swappable fan modules. Each fan module features a fan that pull air through the chassis from the front through to the rear. The 7280 controller can tolerate the failure of a single fan while maintaining a safe operating temperature for the controller.

The 7280 controller is not compatible with fan modules from other Aruba hardware platforms.

The LED behavior in the fan module is as follows:

- Green - Fan module is operational
- Amber - Fan module is faulty

Hot Swapping

Hot swapping allows you to replace a failed fan module, making it unnecessary to shut down the 7280 controller during the replacement procedure.

PSU Slot 0

The Aruba 7280 controller is equipped with a 550W power supply, which is an autosensing, load-sharing, redundant power supply module that supports an input voltage of 100 VAC to 240 VAC. Each power supply has a country-specific power cord for connection to an AC power outlet.

The Aruba 7280 controller is shipped with one hot-swappable, field-replaceable, AC power supply in PSU slot 0 and one filler panel in PSU slot 1. The controller can operate with one or two active power supplies, depending on the demands of your configuration. The following sections describe features of the 550W AC power supply:

Load Sharing

Load sharing occurs when more than one power supply of the same rating is installed in the 7280 controller and turned on. Load sharing divides the total power load of the controller among all available power supplies. Since the power supplies work together, the effective power capacity of the controller is increased with each additional power supply.

Redundancy

With power redundancy, the 7280 controller can continue normal operation even when a power supply fails or is turned off. When multiple power supplies are installed, if one becomes unavailable (fails, or is turned off or removed) the remaining power supplies will attempt to provide full power for the device. If the device's total power load does not exceed the combined rated output of the remaining, operational power supplies, the controller will continue to operate.

Hot Swapping

Hot swapping allows you to replace one failed power supply while the others provide full power. This makes it unnecessary to shut down the 7280 controller during the replacement procedure.

Hot swapping is supported only when power redundancy is in effect. This requires that after the target power supply is removed, the device's total power load does not exceed the combined rated output of the remaining power supplies.

Never insert or remove the a power supply module while the power cord is connected to it. Verify that cord has been disconnected from the power supply before installation or removal.

LED Indicators

The following table shows the LED indicators and the corresponding status:

Table 17 *Power Supply Module LED*

Indicator	Status
Green (Solid)	Power supply is operational.
Green (blinking) at 1 Hz	Power supply is in standby.
Green (blinking) at 0.5 Hz	Power cord is unplugged from one power supply and plugged in the other power supply.
Amber (Solid)	Fan module faulty or in protection.
Amber (blinking) at 1 Hz	Warning! Power supply module can operate normally but high temperature without protection, fan speed slow down, voltage lower, high power, and high current.
Off	No power.

Installation of the device should be performed by a trained installation professional.

This chapter describes how to install an Aruba 7280 controller using the many mounting options available. The 7280 controller ships with an accessory kit that includes the equipment needed to install the controller in standard, 19-inch telco rack.

- "Precautions" on page 19
- "Selecting a Location" on page 20
- "Rack Mounting- Standard" on page 20
- "Rack Mount Installation- Mid" on page 22
- "Table or Shelf Installation" on page 23
- "Wall Mounting" on page 23
- "Connecting and Disconnecting the AC Power Cord" on page 25
- "Removing and Installing a Fan Module" on page 26
- "Installing and Removing a Power Supply Module" on page 27
- "Installing an SFP/SFP+/QSFP+/LC Cable" on page 27

Please only use the included or Aruba specified cables, power cords, AC power supplies, and batteries. The power cord should not be used with other electric equipment than what is specified by Aruba.

接続ケーブル、電源コード、AC アダプタ、バッテリーなどの部品は、必ず添付品または指定品をご使用ください。また、電源ケーブルは弊社が指定する製品以外の電気機器には使用できないためご注意ください。

Precautions

- Ensure that the rack is correctly and securely installed to prevent it from falling or becoming unstable.
- Dangerous voltage above 240VAC is always present while the Aruba Power Supply Module is plugged into an electrical outlet. Remove all rings, jewelry, and other potentially conductive material before working with this device.
- Never insert foreign objects into the chassis, power supply, or any other component, even when the power supply is turned Off, unplugged, or removed.
- Ensure that the main power is fully disconnected from the controller by unplugging all power cords from their outlets. For safety, verify that the power outlets and plugs are easily reachable by the operator.
- Do not handle electrical cables which are not insulated. This also includes network cables.
- Keep water and other fluids away from the controller to minimize electrical hazards.

- Comply with electrical grounding standards during all phases of installation and operation of the product. Do not allow the controller's chassis, network ports, power supply, or mounting brackets to contact any device, cable, object, or person attached to a different electrical ground. Also, never connect the device to external storm grounding sources.
- Perform installation or removal of the chassis or any module in a static-free environment. Proper use of anti-static body straps and mats is strongly recommended.
- Modules must be kept in anti-static packaging when not installed in the chassis.
- Do not ship or store this product near strong electromagnetic, electrostatic, magnetic, or radioactive fields.
- Do not disassemble the chassis.

Selecting a Location

The 7280 controller, like other network and computing devices, requires the following "electronic-friendly" environment:

- Reliable power

  Verify that your electrical outlet is compatible with the 7280 controller power supply.
- Cool, non-condensing ventilation

  For proper operation, the 7280 controller requires an environment with an ambient air temperature between 0° C and 40° C (32° F and 104° F). Humidity must be kept at non-condensing levels, between 10% and 90%.

  Where a large number of electrical devices are working in the same area, additional air conditioning or air circulation equipment may be required.
- Ample space

  For proper air circulation, leave at least 10 cm (4 inches) clearance all around the chassis.

  Leave additional space in front and rear side of the chassis to access power cords, network cables, and indicator LEDs.
- Limited electromagnetic interference

  For best operation, keep the 7280 controller and all cords and cables at least 0.7 meters (2 feet) from fluorescent lighting fixtures, and 2 meters (6 feet) from photocopiers, radio transmitters, electric generators, and other sources of strong electromagnetic interference.

Rack Mounting- Standard

This mounting option allows mounting the 7280 controller in a two-post 19-inch Telco rack.

Each 7280 controller should have its own mounting equipment. Do not place other networking equipment directly on top of a mounted 7280 controller. Failure to do so can damage the device.

Required Tools and Equipment

The following tools and equipment are required for installing a 7280 controller:

- Mounting Bracket (x2) (included in the kit): Do not use for table or shelf installation
- Screws for mounting bracket (x8): M4 x 8 mm Phillips Flat Head Screws (included in the kit)
- Screws for system rack mount (x4): M6 x 15 mm Phillips Pan Head Screws (included in the kit)

- Suitable Screwdrivers for all screw types provided in the box (not included in the kit)

NOTE

Some racks require screws that differ from those included with the 7280 controller. Ensure that you have the correct screws before installing the 7280 controller.

Installation Steps

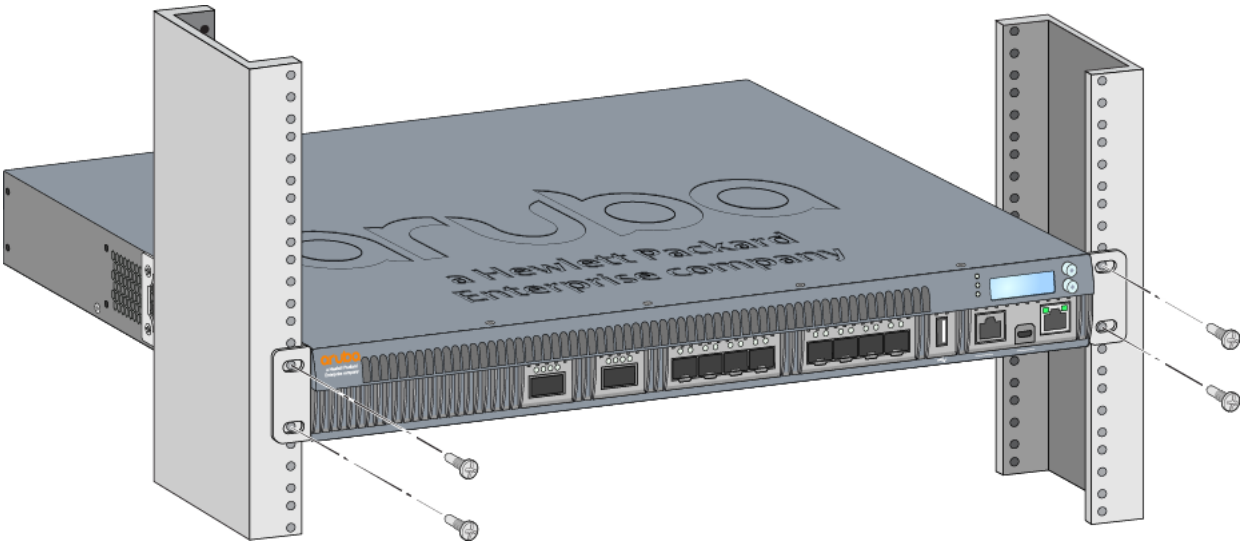
To install a 7280 controller into a two-post 19-inch Telco rack:

1. Place the mounting bracket over the mounting holes on the controller (see Figure 6).
2. Secure the bracket to the controller using the eight screws for the mount bracket (four per bracket) and a suitable screwdriver.

Figure 6 *Rack Mount Brackets*

3. Mount the controller within your organization's rack system using the four screws for system rack mount (two per bracket) and a suitable screwdriver (see Figure 7).

Figure 7 *Rack Mount Installation*



NOTE

Leave a minimum of 10 cm (4 inches) of space on the left and right side of the controller for proper air flow and ventilation.

Leave additional space in the front and the back of the controller to access network cables, LED status indicators, and power cord.

Rack Mount Installation- Mid

This mounting option allows mounting the 7280 controller from the middle in standard two-post 19-inch Telco rack. The mounting brackets can be used for this installation as well.

CAUTION

Each 7280 controller should have its own mounting equipment. Do not place other networking equipment directly on top of a mounted 7280 controller. Failure to do so can damage the device.

Required Tools and Equipment

The following tools and equipment are required for installing a 7280 controller:

- Mounting Bracket (x2) (included in the kit)
- Screws for mounting bracket (x8): M4 x 8 mm Phillips Flat Head Screws (included in the kit)
- Screws for system rack mount (x4): M6 x 15 mm Phillips Pan Head Screws (included in the kit)
- Suitable Screwdrivers for all screw types provided in the box (not included in the kit)

NOTE

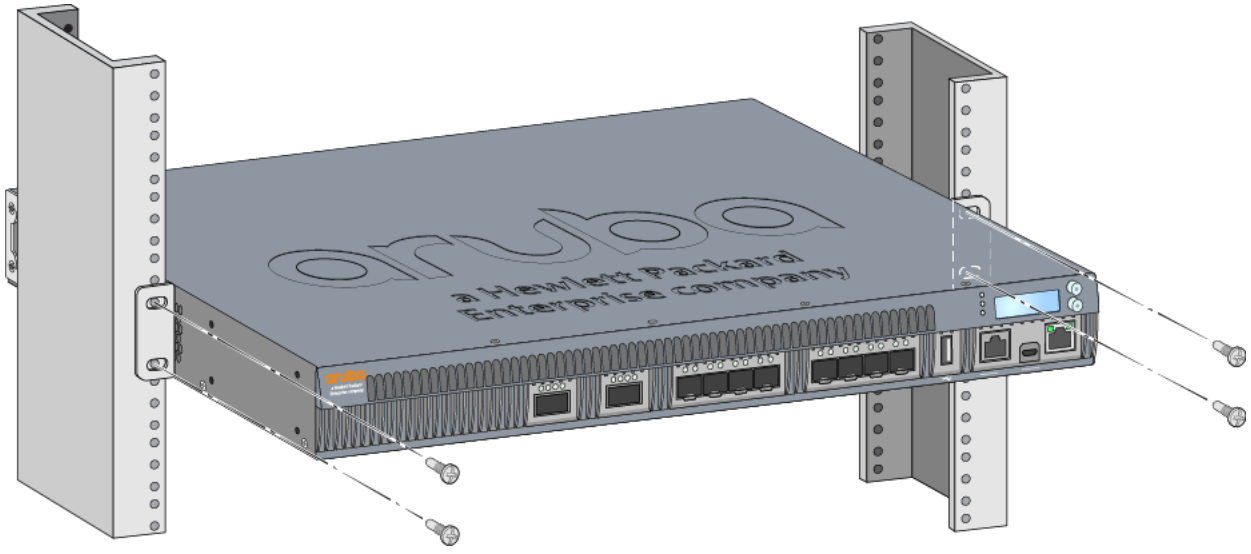
Some racks require screws that differ from those included with the 7280 controller. Ensure that you have the correct screws before installing the 7280 controller.

Installation Steps

To install a 7280 controller from the middle in a standard two-point 19-inch Telco rack:

1. Place the mounting bracket over the mounting holes on either side of the controller in the middle.
2. Secure the bracket to the controller using the eight screws for the mount bracket (four per bracket) and a suitable screwdriver.
3. Mount the controller within your organization's rack system using the four screws for system rack mount (two per bracket) and a suitable screwdriver (see Figure 8).

Figure 8 *Rack Mount Installation- Mid*



NOTE

Leave a minimum of 10 cm (4 inches) of space on the left and right side of the controller for proper air flow and ventilation.

Leave additional space in the front and the back of the controller to access network cables, LED status indicators, and power cord.

Table or Shelf Installation

This mounting option allows mounting the 7280 controller on a table or shelf.

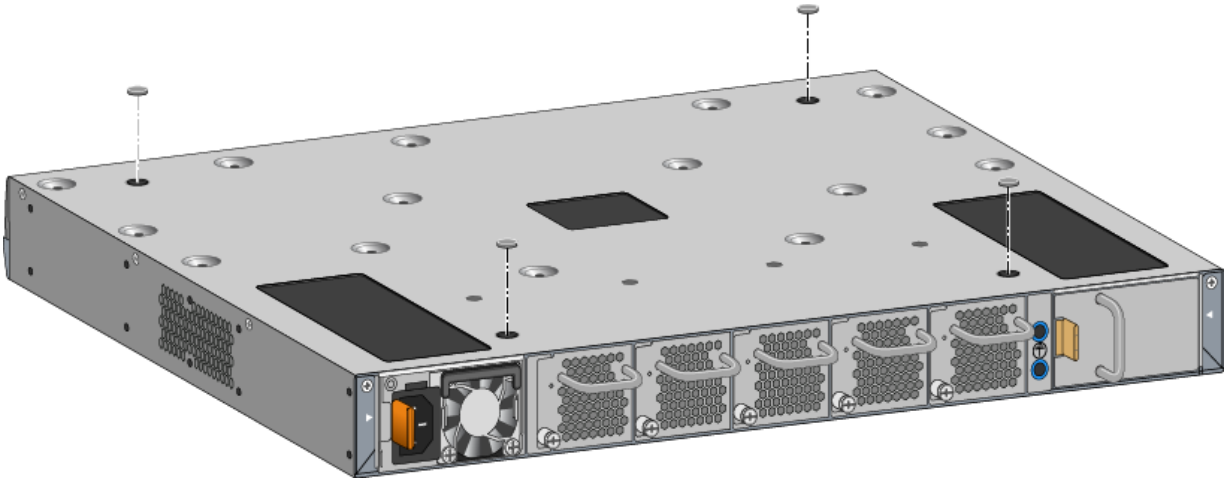
Required Tools and Equipment

- Rubber Feet (included in the kit)

Installation Steps

1. Attach the rubber feet to the bottom of the controller (see Figure 9).

Figure 9 *Attaching Rubber Feet*



2. Place the controller in the location you have chosen.

Wall Mounting

An optional accessory kit (must be purchased separately) is available that allows you to mount the 7280 controller to a wall. For more information about this accessory kit, contact your Aruba sales. representative.

Required Tools and Equipment

The following tools and equipment are required for installing a 7280 controller on a wall:

- Mounting Brackets (x2) (included in the mounting accessory kit))
- Screws for mounting bracket (x8): M4 x 8 mm Phillips Flat Head Screws (included in the kit)
- Wall Anchors: Optional accessory (not included in the kit)
- Wall Mounting Screws: The type of screw depends on the installation surface (not included in the kit)
- Suitable Screwdrivers for all screw types (not included in the kit)

Installation Steps

To install a 7280 controller on a wall:

NOTE

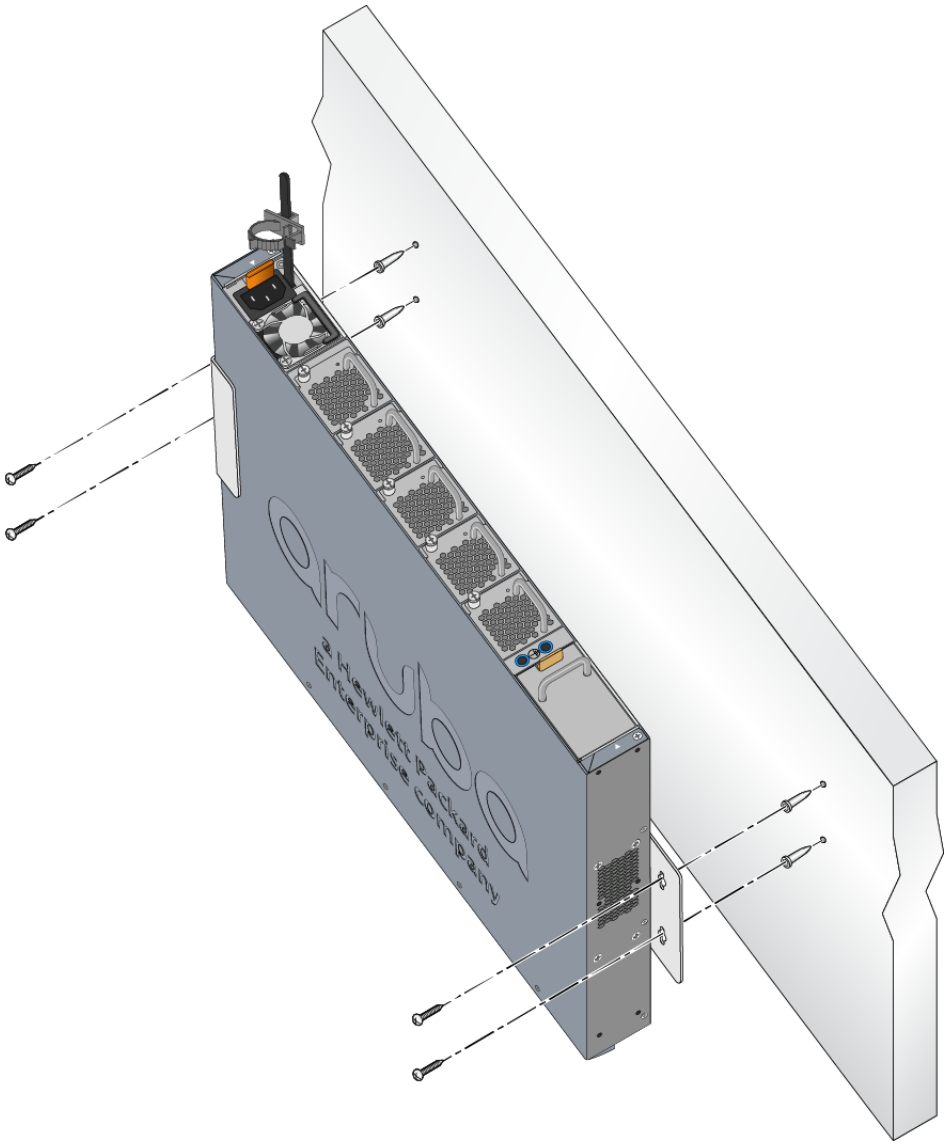
Ensure that the Ethernet ports are facing down when installing the 7280 controller on a wall.

1. Fasten the mounting brackets over the mounting holes on the sides of the 7280 controller using the eight screws for mounting bracket (four per bracket) and a suitable screwdriver (see Figure 10).

Figure 10 *Attaching the Wall Mount Brackets*

2. After you have chosen a mounting location, mark the locations on the wall where you intend to make mounting holes.
3. Create the holes and insert wall anchors if your installation requires them.
4. Align the mounting bracket holes with the holes you created in the wall (see Figure 11).
5. Use appropriate screws to secure the 7280 controller.

Figure 11 *Wall Mounting*



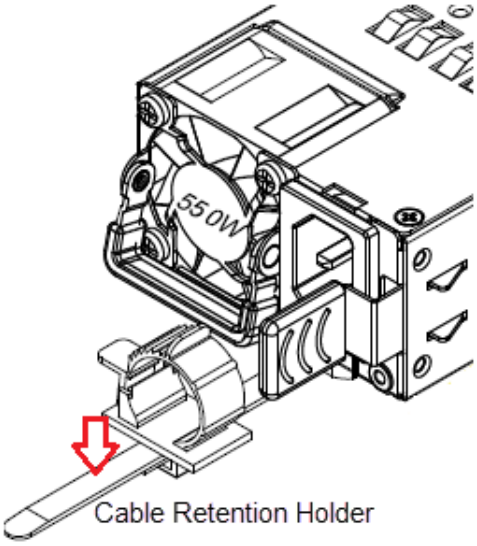
Connecting and Disconnecting the AC Power Cord

Once you have installed the 7280 controller, you are ready to power on the device. The 7280 controller is not equipped with an On/Off switch. The device will power on when the AC power cord is connected to the power supply and an AC power outlet.

To connect the AC power cord to the 7280 controller:

1. Insert the coupler end of the AC power cord into the AC power connector on the power supply module.
2. Secure the AC power cord using the cable retention holder attached on the power supply module. See Figure 12.

Figure 12 *Cable Retention Holder on Power Supply Module*



The 7280 controller should now be receiving power.

To disconnect the AC power cord from the 7280 controller:

1. Loosen the cable retention holder that is securely holding the AC power cord.
2. Pull the AC power cord from the power supply module.

The 7280 controller is now turned Off.

NOTE

If two power supply modules are installed in the controller, disconnect AC power cord from both power supply modules to turn off the controller.

Removing and Installing a Fan Module

NOTE

Use standard ESD precautions when installing or removing a fan module.

The fan module is field-replaceable and hot-swappable. Hot-swapping allows you to replace the fan module without having to power down the controller.

To install and remove a fan module:

1. Remove the old fan module.
   a. Using a Phillips Head screwdriver, turn the screws counter-clockwise until loose (they cannot be removed completely).
   b. Use the fan module handle to pull the fan module out.
2. Align the new fan module with opening in the controller.

CAUTION

Ensure that fan module is correctly aligned with the opening on the controller. Failure to do so can result in damage to the fan module.

3. Insert the fan module into the controller.
4. Tighten the screw on the fan module to secure it.

Installing and Removing a Power Supply Module

CAUTION

Never insert or remove a power supply module while the power cord is connected. Verify that cord has been disconnected from the power supply before installation or removal.

NOTE

Use standard ESD precautions when installing or removing a power supply module.

The power supply module is hot-swappable when two power supplies are installed. Hot swapping allows you to replace a failed power supply without powering down the 7280 controller during the replacement process. This makes it unnecessary to shut down the 7280 controller during the installation procedure.

Installing a Power Supply Module

If you are replacing a failed power supply, see "Removing a Power Supply Module" on page 27 before you proceed:

1. Align the new power supply module with the opening in the controller.
2. Insert the power supply module into the controller until the tab securely engages on to the controller.
3. Insert the AC power cord in the AC connector on the power supply module. For more details, see "Connecting and Disconnecting the AC Power Cord" on page 25.

If you are adding an additional power supply module:

1. Remove the filler panel in PSU slot 1 by pulling the tab on filler panel towards the left and sliding it out using the handle.
2. Align the additional power supply module with the opening in the controller.
3. Insert the power supply module into the controller until the tab securely engages on to the controller.
4. Insert the power cord in the AC connector on the power supply module. For more details, see "Connecting and Disconnecting the AC Power Cord" on page 25.

Removing a Power Supply Module

To remove the power supply from the 7280 controller:

1. Remove the power cord in the AC connector on the power supply module. For more details, see "Connecting and Disconnecting the AC Power Cord" on page 25.
2. Lift the handle on the power supply module.
3. Pull the tab on the power supply module towards the left and slide it out using the handle.

Installing an SFP/SFP+/QSFP+/LC Cable

SFP/SFP+/QSFP+ modules are collectively referred as SFP modules in this section.

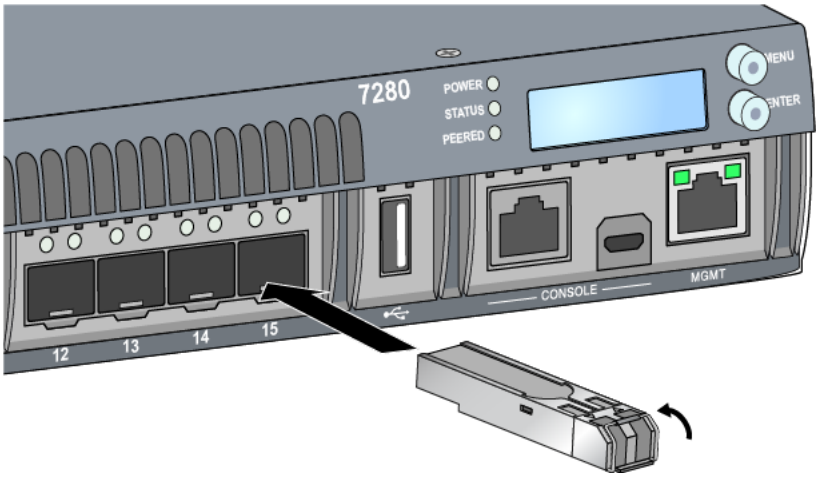
NOTE

Use standard ESD precautions when installing or removing an SFP.

Connecting the SFP module

To connect an SFP module into the 7280 controller, slide the SFP module, top side facing upward, into a corresponding 1000Base-X port or 40 GbE QSFP+ port until a connection is made and an audible click is heard (see Figure 13).

Figure 13 *Installing an SFP*



Removing an SFP Module

To remove an SFP module:

1. Open and release the latch on the module.
2. Pull and remove the module from the port.

Connecting an LC Cable

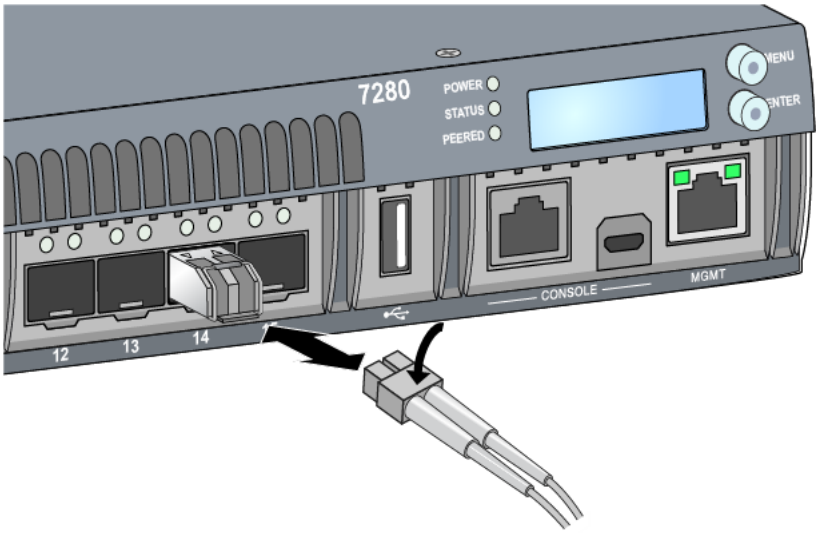
To connect a LC fiber cable into an SFP module:

1. Clean the LC fiber optic cable connector before inserting it into the SFP module.
2. Insert the LC fiber optic cable into the SFP module. Ensure that the latch on the cable faces the top of the SFP module (see Figure 14).
3. Slide the cable into place until a connection is made and an audible click is heard.

Disconnecting an LC Cable

To disconnect an LC fiber optic cable from an SFP module, depress the transceiver handle to release the latch on the cable and simultaneously pull the cable out of the port.

Figure 14 *Connecting an LC Fiber*



7280 Specifications

Physical

- Device Dimensions (without mounting brackets) (HxWxD): 1.73” x 17.40” x 15.79” (4.4 cm x 44.2 cm x 40.1 cm)
- Device Weight: 17.41 lbs (7.9 kg)

Power Supply Specifications

- 550W AC Power Supply
  - AC Input Voltage: 100 VAC to 240 VAC
  - AC Input Current: 7.1 A max
  - AC Input Frequency: 50 to 60 Hz

Operating Specifications

- Operating Temperature Range: 0 °C to 40 °C (32 °F to 104 °F)
- Operating Humidity Range: 10% to 90% (RH), non-condensing

Storage Specifications

- Storage Temperature Range: –40 °C to 70 °C (-40 °F to 158 °F)
- Storage Humidity Range: 10% to 95% (RH), non-condensing

Operating Altitude

- Operating Altitude Range: 0 to 10,000 ft

Regulatory Model Name

The regulatory model name for the 7280 controller is ARCN7280.

Safety and Regulatory Compliance

Aruba Networks, Inc. provides a multi-language document that contains country-specific restrictions and additional safety and regulatory information for all Aruba products. This document can be viewed or downloaded from the following location: www.arubanetworks.com/safety_addendum

Aruba controllers must be installed by a professional installer. The professional installer is responsible for ensuring that grounding is available and it meets applicable local and national electrical codes.

CAUTION

Use of controls or adjustments of performance or procedures other than those specified in this manual may result in hazardous radiation exposure.

This product complies with 21 CFR Chapter 1, Subchapter J, Part 1040.10, and IEC 60825-1: 1993, A1: 1997, A2: 2001, IEC 60825-2: 2000.

For continued compliance with the above laser safety standards, only approved Class 1 modules from our approved vendors should be installed in the product.

CAUTION

Although this controller has been tested up to 1kV per CE immunity requirements, this product requires surge protection to be provided as part of the building installation to protect against unidirectional surges resulting from electrical switching and lightning strikes.
For protection against these surges in an outdoor installation, any exposed wiring must be shielded, and the shield for the wiring must be grounded at both ends.

Electromagnetic Interference

United States

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This product complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Canada

This Class A digital apparatus complies with Canadian ICES-003." & "Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Europe

CAUTION

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

Japan VCCI

この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take corrective actions.

Taiwan (BSMI)

警告使用者：
這是甲類的資訊產品，在居住的環境中使用
時，可能會造成射頻干擾，在這種情況下，
使用者會被要求採取某些適當的對策。

EU Regulatory Conformance

CE This product is CE marked according to the provisions of the EMC Directive (2004/108/EC) - CE. Aruba Networks Inc., hereby declares that 7280 controller device models are in compliance with the essential requirements and other relevant provisions of Directive (2004/108/EC). CE The Declaration of Conformity made under Directive 1999/5/EC is available for viewing at the following location in the EU community.

Battery Statements

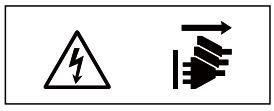
CAUTION

The battery supplied with this product may contain perchlorate material. Special handling may apply in California and other certain states. See www.dtsc.ca.gov/hazardouswaste/perchlorate for more information.

WARNING

Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

Other Safety Compliance



Shock hazard. Disconnect both power cords to remove power.

CAUTION

For indoor use only. The controller, AC power cord, and all connected cables are not designed for outdoor use.

Proper Disposal of Aruba Equipment

Waste of Electrical and Electronic Equipment

Aruba products at end of life are subject to separate collection and treatment in the EU Member States, Norway, and Switzerland and therefore are marked with the symbol shown at the left (crossed-out wheelie bin). The treatment applied at end of life of these products in these countries shall comply with the applicable national laws of countries implementing Directive 2002/96EC on Waste of Electrical and Electronic Equipment (WEEE).

European Union RoHS

Aruba products also comply with the EU Restriction of Hazardous Substances Directive 2002/95/EC (RoHS). EU RoHS restricts the use of specific hazardous materials in the manufacture of electrical and electronic equipment. Specifically, restricted materials under the RoHS Directive are Lead (including Solder used in printed circuit assemblies), Cadmium, Mercury, Hexavalent Chromium, and Bromine. Some Aruba products are subject to the exemptions listed in RoHS Directive Annex 7 (Lead in solder used in printed circuit assemblies). Products and packaging will be marked with the “RoHS” label shown at the left indicating conformance to this Directive.

India RoHS

This product complies with RoHS requirements as prescribed by E-Waste (Management & Handling) Rules, governed by the Ministry of Environment & Forests, Government of India.

China RoHS

Aruba products also comply with China environmental declaration requirements and are labeled with the “EFUP 50” label shown at the left.

有毒有害物质声明

Hazardous Materials Declaration

部件名称 (Parts)	有毒有害物质或元素 (Hazardous Substances)					
	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Chromium VI Compounds (Cr^{6+})	多溴联苯 Polybrominated Biphenyls (PBB)	多溴二苯醚 Polybrominated Diphenyl Ether (PBDE)
电路板 PCA Board	X	O	O	O	O	O
机械组件 Mechanical Subassembly	X	O	O	O	O	O
电源适配器 Power Adaptor	X	O	O	O	O	O

O: 表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006标准规定的限量要求以下。
This component does not contain this hazardous substance above the maximum concentration values in homogeneous materials specified in the SJ/T11363-2006 Industry Standard.

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006标准规定的限量要求。
This component does contain this hazardous substance above the maximum concentration values in homogeneous materials specified in the SJ/T11363-2006 Industry Standard.

对销售之日的所售产品，本表显示，供应链的电子信息产品可能包含这些物质。
This table shows where these substances may be found in the supply chain of electronic information products, as of the date of sale of the enclosed product.

此标志为针对所涉及产品的环保使用期标志.
某些零部件会有一个不同的环保使用期(例如, 电池单元模块)贴在其产品上.
此环保使用期限只适用于产品是在产品手册中所规定的条件下工作.
The Environment- Friendly Use Period (EFUP) for all enclosed products and their parts are per the symbol shown here. The Environment- Friendly Use Period is valid only when the product is operated under the conditions defined in the product manual.